Assessing the Relationship between the Cash Balance and Cumulative Abnormal Returns of Companies Listed in Tehran Stock Exchange

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ABSTRACT

The main objective of this study is to investigate the relationship between the cash balance and cumulative abnormal returns of companies listed in Tehran Stock Exchange. In order to achieve this goal, the financial information of 156 companies in Tehran stock exchange was analyzed for the period of 2009 – 2014. Required information extracted from Rah Avard Novin 3 and summarized, calculated by Excel and finally analyzed by Eviews. According to statistical methods conducted in 0/95 confidence level, the assumptions were tested. The results showed that the cash balance has a positive and significant relationship with cumulative abnormal returns.

Keywords: Performance, cash balance, and cumulative abnormal return, current returns.

1. INTRODUCTION

Two prevailing theories for cash holdings discussion are exchange theory (TOT) and hierarchical theory (POT). According to the theory of exchange, companies determine the optimum level of cash holdings based on a balance between benefits and costs of holding cash. Three major incentive to hold cash are an incentive to trade, precautionary motive and speculative motive. In accordance with the trading incentives, companies faced with lack of internal resources can provide it by reducing by selling assets, issuing new shares, debt or reduce dividends. But all of these strategies involve costs that are both variable and fixed costs elements. As a result, companies face deal with high transaction costs for their payments, keep large liquid assets. According to the precautionary motive, companies hold cash in hard times to reduce the likelihood of financial crisis. Given the speculative motive, company provide cash holdings to take advantage of future unexpected investment opportunities when external financing is costly. But large cash holdings

also have disadvantages (Ferreira and Vilela, 2004). Keeping too much cash, can be a sign of inefficiency in resource allocation and impose heavy costs on companies (Ahadi Sarkani et. al., 2013, p. 79). Many companies remark cash and its growth in the balance sheet. Comprehension of cash holdings concepts is very important for the functioning. Businesses can affect future performance and efficiency with the balance in cash holdings. While some have much attention to hold too much cash to enhance current and future performance and pay less to optimal level of cash holdings (Oler and Picconi, 2014, p. 253).

In fact, the optimal level of cash should be in a way that on the one hand because of the lack of liquidity, major losses to the enterprise not happen, on the other hand by holding extra cash, opportunities not missed, which this is that level of liquidity companies are looking for it. Of course, this level of liquidity, due to the different characteristics of firms and different time periods, is different (Aghaei and et. al., 2009, p. 54). According to balance theory, companies determine the optimal amount of their cash by establishing a balance (equilibrium) between benefits and the costs of cash holdings (Rasaeian et. al., 2010, p. 126). Generally, companies determined their strategies to manage their cash on the basis of two objectives:

1. Supply cash for the company payments;
2. To minimize stagnant funds in the company.

The second objective is the reflection of this mentality that if items of assets not used properly, there will be no returns for the company. Unfortunately, these two goals may be contradictory. Lowering the level of cash and using all cash, may lead to cash shortages for on time payments. Therefore, cash flow management strategies should create co-ordination between these two objectives. Therefore, proper liquidity management, can have a direct impact on future performance and stock returns while the expected amount of cash in the company could prevent the liquidity problems (Asadi, 2011, p. 12). According to the above, main objective of this study was to investigate the relationship between deficit and excess cash and futures abnormal returns of listed companies on Tehran Stock Exchange.

2. THEORETICAL PRINCIPLES

In the past decades, accounting has faced a growing number of challenges to applying new methods, design appropriate changes in the economic environment and reform observed inefficiencies in the existing structure of the governing laws. Among the issues that could be mentioned in this context, is maintenance of company's optimized cash flow and returns. How to use internal funds, is an important decision in the conflict between shareholders and managers. In the era of company economic growth, as increased cash reserves, managers decide whether cash to be distributed among shareholders, spent for the domestic expenses, external qualification or continue to be maintained? How the self-interested managers choose between the application cash reserves or maintaining it in order to achieve an appropriate return, or not, is the main topic of this study.

3. LITERATURE REVIEW

Internal Background

Aghaei and colleagues (2009) examined the factors affecting the maintenance of cash holdings in listed companies on Tehran Stock Exchange. The results indicate that the receivables, net working capital, inventories and short-term debt, are the most important factors that have a negative impact on cash

holdings maintenance. On the other hand, growth opportunities of the company, dividends, volatility of cash flows and net income, respectively, are of the most important factors that have a positive impact on cash holdings maintenance, but there is insufficient evidence about the negative impact of long-term debt and firm size on maintaining cash holdings.

Eslami (2010), conducted a study entitled the impact of changes in expected cash flows on the company's future performance. For this purpose, the number of 92 companies during 2004 to 2008 were studied through the analysis of cross-sectional and compiled data. The results show that the deviation from the expected cash has impact on future returns. The effect of negative and positive deviation in the expected cash is significant and due to the larger size of the negative deviation in future returns on assets can be concluded that the effect of negative deviations in expected cash, is greater than the effect of positive deviation. The size deviations has positive and significant effect on future returns of assets, but the deviation from the expected cash has no impact on future returns of operating assets.

Sharifi (2010), conducted a study entitled effect of cash holding amount on company's future performance. Results of analysis based on tabulated data show that company's future performance which future returns of net operating assets is its representative decrease if negative and positive deviation from expected optimized cash level happens. Investigating future cumulative abnormal returns also shows decrease in stock's future return due to excess cash which shows that market is not able to predict excess cash effects completely in current returns. His findings also showed that young companies face excess cash, have higher future stock returns which means these companies need more cash compared to other companies.

Yousefi Rad (2012), studied the relationship between diversification strategy and the value of cash holdings level with the cumulative abnormal returns of listed companies in Tehran Stock Exchange. For this purpose, three hypotheses were developed to investigate the matter and tested by regressing the panel data for the period of 2005 – 2009 in the Tehran Stock Exchange. The results show that there is significant negative relationship between the diversification strategy and accumulated abnormal returns while there was no significant relationship between cumulative abnormal returns and the level of cash holdings.

Chavosh Pur Mamaghan (2012), studies the effect of holding cash excess on shareholders returns. For this purpose, 122 companies examined in the period from 2002 to 2011 using correlation and multivariate regression. The results showed that there was no significant relationship between excess liquidity and efficiency. The results also showed that there is a significant relationship between the final value of the cash excess in companies with persistent excess liquidity and excess returns.

Fakhari and Ruhi (2013), examined the effect of cash holding and working capital management on excess stock returns. For this purpose, 84 companies during 2007 to 2012 examined by analyzing combined tabulated data. Their results showed that there is a significant relationship between cash holding and working capital with excess stock returns, given the interaction between cash and working capital of current year to last year and also leverage effect on them. They believe that their findings, shows the importance of short-term decisions effects on excess stock returns and state that due to limited financial resources, working capital and cash excess holdings have direct relationship with the excess stock returns.

Lashgary and colleagues (1394) examined the effect of excess and deficit cash on stock returns in inflationary conditions. Cash is of vital resources in any profit unit and the balance between available cash

and cash needs, is the most important factor of economic health. In addition, companies with a shortage of cash, have a lot of problems, so this study examined the relationship between deficit and cash excess and stock returns. For this purpose, 125 companies were examined during the period 2001 – 2011. The method used in this research is panel method and the screening method used for the sampling. The results of this study indicate that there is no significant relationship between excess and deficit cash and stock returns in terms of inflation. But there is a significant relationship between excess and deficit cash and stock returns in terms of lack of inflation.

4. FOREIGN BACKGROUND

Mikkelson and Partch (2003) carried out study entitled are high cash reserves an obstacle to the functioning? They came to the conclusion that permanent keeping the cash excess will not lead to poor performance and does not represent a conflict of interest between managers and shareholders. Their evidence is consistent with the assumption that reserves of cash, increase the value of the company.

Pinkvitz and colleagues (2006), studied the effect of supporting shareholders in country level on cash holdings and company's value when the situation is asymmetrical. They showed that in countries with low support for investors, cash has low value for minor shareholders. This conclusion is consistent with the assumption that low support for shareholders rights, leads to the fact that manager and stakeholders can drive company's resources toward their interests.

Harford and colleagues (2008), studied corporate governance and cash holdings in the U.S. they used a sample of 11645 year – company for 1872 company to study the relationship between cash holdings and corporate governance structure. The results show that companies with more internal ownership and higher institutional ownership have more cash holdings while companies with higher quality of and more independent corporate governance and boards have lower cash holdings.

Riddick and Whited (2009) studied the reasons for holding cash by companies and their changes. They used a dynamic model in their research and controlled Q – Tobin variable and concluded that there is a negative significant relationship between cash flows and changes in cash holdings value. They argued that the reason for tendency to hold less cash against positive cash flows is positive productivity due to application of cash flows and reduced costs of financial supply.

Nobanee and colleagues (2011), examined the effect of transformation period of cash on business unit performance in Japanese companies. They observed that the transformation period of cash is an important criterion to assess the management method which companies use for their working capital. Their results showed that working capital management in Japanese companies can increase profitability of companies by reducing transformation period of cash.

Chen and colleagues (2012), studied liquidity and future stock returns in construction industry. In this research they studied the way in which deviations from expected cash holdings value affects future stock returns. The findings of the study showed that any deviation from expected cash value is harmful for future performance of the company in the market and future stock returns.

Velnampy and kajananthan (2013) studied the relationship between cash condition and profitability of telecommunication companied listed on Sri Lanka stock exchange. In this study, assets return and shareholders' equity return as profitability representative (dependent variable) and cash and it equivalent

to sale ration ratio, cash and it equivalent to the total assets ratio and cash and it equivalent to current liabilities as the representative of liquidity condition (independent variable) are considered. The analysis was conducted through regression and Pearson's correlation using SPSS software. Results from Pearson's correlation test showed a significant relationship between assets return and shareholders' equity returns and cash condition. Regression test also indicated that cash condition has a positive effect on profitability and there is a positive relationship between these two.

Oler and Picconi (2014) studied cash deficit and excess consequences for future performance. They used the return on assets and cumulative abnormal returns in this study to measure performance. For this purpose financial information of 57865 year – company during were examined for the period of 2008-1990 using the method of least squares (OLS). Their results suggest that excess cash has a negative relationship with asset returns and cumulative abnormal returns.

Ganguli (2014) examined excess cash and stock returns. His results suggest that potential growth of liquidity holdings doesn't imply higher return and doesn't lead to stock returns.

5. CASH HOLDING AND RETURN

Although the cash held on the balance sheet, is an important asset for the company maintenance of this assets for too much time can be a sign of inefficiency in resource allocation and impose costs to the company (Ahadi Sarkani et. al., 2013, p. 79). Some of the costs include the opportunity cost of capital and agency costs associated with the monitoring. The most important factors of excess cash holdings, are information asymmetry and problems resulted from it (Subramanian et. al., 2011).

Cash holdings have their own costs. High maintenance of cash by companies, can lead to the formation of agencies conflict between managers and shareholders. This may increase managerial discretion and harm the interests of shareholders; In other words, high cash holdings, result in the opportunity cost for companies; because cash has low rate of return and can significantly affect the efficiency of the market and firms' operating performance; on the other hand, failure to maintain adequate cash for companies that are facing financing constraints, may cause loss of future investment opportunities and therefore have a negative effect on future performance and returns; However, other theories speak of the benefits of holding cash and believe that due to deployment of possible future investment opportunities, companies try to hold high cash which by ignoring agency conflict theory, expect increased return and future performance of the company (Bolur et. al,. 2012, p. 9).

6. METHODOLOGY

Given that the results of this study may attract financial managers, investors and other stakeholders in decision making, thus this research is applied in terms of the goal. In addition, this study is kind of descriptive – correlative in terms of content and research method because it investigates the relationship between several variables. All companies listed on Tehran stock exchange create the sample of this study. We used systematic removal method to choose the sample. The companies with the following characteristics were selected: (1) are present in exchange from 2009 to 2014. (2) Firms are not the banks and financial intermediation, leasing and other investment companies. (3) In order to compare the data, their fiscal year ending is 20 March. (4) Don't have trading interval more than 4 months. (5) Data and information is complete.

Hypotheses and Corresponding Model

Given the above, the following hypotheses have been developed.

1. There is a significant relationship between cash and current cumulative abnormal returns of the stock of listed companies on Tehran Stock Exchange.

$$CAR_{j,t} = \beta_0 + \beta_1 ACD_{j,t} + \beta_2 MB_{j,t} + \beta_3 CFO_{j,t} + \beta_4 CFF_{j,t} + \beta_5 CFI_{j,t} + \varepsilon_{j,t}$$

2. There is a significant relationship between cash and future cumulative abnormal returns of the stock of listed companies on Tehran Stock Exchange.

$$CAR_{j,t+1} = \beta_0 + \beta_1 ACD_{j,t} + \beta_2 MB_{j,t} + \beta_3 CFO_{j,t} + \beta_4 CFF_{j,t} + \beta_5 CFI_{j,t} + \varepsilon_{j,t}$$

Variables and Measuring Methods

Independent variable: the absolute value of the difference between actual cash balance and optimal cash balance. According to Oler and Picconi (2014) to calculate the optimal cash we use regression model as below.

Model 1:

$$Cash_{j,t} = \beta_0 + \beta_1 FS_{j,t} + \beta_2 NWC_{j,t} + \beta_3 CE_{j,t} + \beta_4 IS_{j,t} + \beta_5 DD_{j,t} + \beta_6 SG_{j,t} + \beta_7 CFO_{j,tj,t} + \beta_8 Age_{j,t} + \varepsilon_{j,t}$$

$Cash_{j,t}$ = Is equal to the logarithm of the company's *j* cash balance at the end of period *t*;

$FS_{j,t}$ = Indicated company's size which is obtained by the natural logarithm of the book value of company's *j* assets at the end of period *t*;

$NWC_{j,t}$ = Net working capital that the method of calculation is as follows, (cash - working capital) divided by (cash - total assets) for company *j* in period *t*; working capital is achieved from difference between current assets minus current liability;

$CF_{j,t}$ = Capital expenditures in year *t*, which obtained from changes in fixed assets between years *t* and $t-1$ (Rahmani et. al., 2011). In other words, capital expenditure is obtained from the difference between the fixed assets of the current year compared to last year's fixed assets;

$IS_{j,t}$ = 5-year standard deviation ratio (cash from operating activities of company *j* at the end of period *t* divided by cash generated from operating activities relevant industry);

$DD_{j,t}$ = If the company *j* in period *t* has dividends to shareholders during the past year is equal to 1 otherwise 0;

$CFO_{j,t}$ = if the cash from operating activities is less than cash 1 otherwise 0, company *j* at the end of the period *t*;

$SG_{j,t}$ = The growth rate of sales (previous year sales - this year sales) divided by (previous year sales) for company *j* at the end of the period *t*;

$AGE_{j,t}$ = Age of the company which is the logarithm of the number of years the company *j* was founded at the end of period *t* is;

β_0 = model constant coefficient;

$B_{1, \ldots, 7}$ = Variables constant coefficient;

$\varepsilon_{j,t}$ = model error.

Finally deficit and excess cash is calculated from difference between cash estimate (according to regression equation above) and actual cash flow of the company.

Dependent Variables:

1. Cumulative abnormal returns of current year: cumulative abnormal returns obtained from the difference between stock returns and market returns (stock return minus market returns).

   (a) Stock returns: Here, stock return is calculated as follows. (This variable is available in Rah Avard Novin 3 database).

$$\text{stock return} = \frac{(\text{base price} - \text{day price}) + \text{dividens} + \text{priority} + \text{bonus stock}}{\text{base price} + (1000 \times \text{percent of capital increase from return}) \times 1000} \quad (1)$$

   (b) Market return: (market return is calculated based on total market index. In such a way that the total market index in this period (20/March) will be deducted of the total market index and then divided by the total market index at the beginning of the period) (Bolur and Rahmani Mehr, 2014, p. 67). Here market return is obtained from the following equation. (This variable is available in Rah Avard Novin 3 database).

$$A_m = \frac{\text{total market index at the end of period} - \text{total market index at the beginning of period}}{\text{total market index at the beginning of period}} \quad (2)$$

2. Cumulative abnormal returns of next year: To calculate this variable, similar procedure like cumulative abnormal returns of current year is followed with the difference that it is calculated using financial data of the next year.

Control Variables:

(a) Financial leverage: For the calculation of the variable, ratio of total debt to total assets is used.

(b) The ratio of book value to market value of equity: to calculate the variable, the ratio of market value to book value of the common stock of the company is used.

(c) Free cash flow: the following equation is used to calculate the variable.

$$FCF_{j,t} = \frac{INC_{j,t} - I_{j,t} - TAX_{j,t} - D_{pf,t} - D_{j,t}}{E_{j,t}} \quad (3)$$

where,

$FCF_{j,t}$ = Free cash flow of company *j* in period *t*;

$INC_{j,t}$ = Operating profit before depreciation of company *j* in period *t*;

$I_{j,t}$ = Interest cost paid by company *j* in period *t*;

$TAX_{j,t}$ = Total tax paid by company *j* in the period *t*;

$D_{ptj,t}$ = Premium dividends to shareholders paid by company *j* in period *t*;

$D_{j,t}$ = Cash stock profit resulted from common stock of company *j* in period *t*;

$E_{j,t}$ = Total book value of shareholders equity of company *j* in period *t* (Ye et. al, 2013).

(d) Cash flow resulted from investment activities: cash flow resulted from investment activities of company *j* at the end of period *t*. ()

(e) Firm size: Company size obtained through natural logarithm of the book value of assets of company *j* at the end of period *t*;

(f) Net working capital: Net working capital that method of calculation is as follows, (cash - working capital) divided by (cash - total assets) for j in period t; working capital is achieved of the difference between current assets minus current liabilities;

(g) Cash from operating activities: Cash generated from operating activities less cash is 1 otherwise 0 for company j at the end of period t. (Mined from the statement of cash flows).

(h) Sales growth rate: for the calculation of the variable, following equation is used.

(i) Sales growth: to calculate the variable, the difference between current year sales and last year sales divided by the previous year sales.

Statistical Methods

F Leamer test and Hausman test were used to determine mixed data type and *t*-test was used to determine the significance relationship between any dependent and independent variable and F-test with some difference also was used to test significance general relationship of regression equations. Modified Determination coefficient R^2 will applied to relationship between dependent and independent variables. For analyzing results and data mining, Excel and Eviews and Stata software will be used.

Research Findings

Analyzing information is a main part of research process. In other words, in this section researcher uses different analyzing methods to answer research question or decide to reject or confirm the hypothesis of the study.

Descriptive Statistics

Table 4-4 shows descriptive statistics of the main variables of the model for the 156 sample companies, over 5 years which indicate descriptive parameters for each variable separately. These parameters generally include information about the central indices such as mean, median, maximum, minimum, and information about dispersion indices such as standard deviation, skewness and kurtosis. The most important central Index is median, which reflects the equilibrium point and the distribution center of gravity and is perfect for showing the centrality of data. For example, the median of cumulative abnormal returns variable in the current period (CARt) is equal to 11.683 suggesting that much of the data for that variable focuses on this point.

Table 1
Descriptive statistics of variables

Variable		*Mean*	*Median*	*Max*	*Min*	*SD*	*Skewness*	*Kurtosis*
Title	*Symbol*							
Cumulative abnormal returns in the current period	CAR_t	11.683	–12.98	754.82	–157.92	105.92	2.973	15.90
Cumulative abnormal returns in the future period	CAR_{t+1}	13.544	–6.200	754.82	–157.90	94.809	2.935	17.26
Financial leverage	LEV_t	0.646	0.640	2.970	0.100	0.255	3.261	26.986
The ratio of market value to book value	MB_t	2.530	2.010	99.460	–57.010	5.440	7.574	172.750
Free cash flow	CFF_t	–309152	–22196	16827709	–39888692	3134203	–5.811	65.541
Cash flow from investing activities	CFI_t	–0.492	–0.020	8.520	–56.050	3.233	–11.995	174.6
Firm size	FS_t	5.952	5.880	8.160	4.390	0.620	0.738	3.874
Net working capital	NWC_t	0.047	0.070	0.826	–2.304	0.256	–2.719	24.14
Cash flow from operating activities	CFO_t	0.135	0.115	0.865	–0.335	0.145	0.699	4.825

Resource: Research findings

First Hypothesis Test

Table 2
The results of the first hypotheses test using the first model
$$\mathbf{CAR_{j,t} = \beta_0 + \beta_1 ACD_{j,t} + \beta_2 MB_{j,t} + \beta_3 CFO_{j,t} + \beta_4 CFF_{j,t} + \beta_5 CFI_{j,t} + \varepsilon_{j,t}}$$

Variable		*Estimation coefficients*	*Standard error*	*t-statistics*	*P-value*
Title	*Symbol*				
Width from origin	B_0	–13.168	2.588	–5.087	0.000
Cash balance	ACD	–0.00006	0.000	–3.264	0.0092
Market value to book value of shareholders' equity ratio	MB	4.803	0.722	6.657	0.000
Cash flow from operating activities	CFO	–10.551	10.821	–0.975	0.330
Free cash flow	CFF	0.000	0.000	–1.285	0.199
Cash flow from investment activities	CFI	1.285	0.487	2.639	0.009
First order auto – regression process	AR(1)	0.195	0.033	5.855	0.000

R^2 statistics = 0/1511 F statistics probability = 0/000
Modified R^2 statistics = 0/1429 Durbin – Watson = 1/8717

After making sure of classical assumptions, in order to estimate the model given the existence of auto – correlation and variance homogeneity, first order auto – regression process AR(1) was used in mixed data. Table 2 shows the summary of results from model estimation for first hypothesis. According to results inserted in the table P-value of *t*-statistics is less than 5%, we can conclude that the model for the first hypothesis at 95% confidence level is significant and according to determination coefficient (0/1511)

the model is valid. Due to the fact that P-value is 0/0019 for B_1, the first hypothesis of the study is not rejected at 5% significance level and there is a significant relationship between cash balance and cumulative abnormal return of current stock.

Second Hypothesis Test

Table 3
The results of the second hypotheses test using the second model
$$CAR_{j,t+1} = \beta_0 + \beta_1 ACD_{j,t} + \beta_2 MB_{j,t} + \beta_3 CFO_{j,t} + \beta_4 CFF_{j,t} + \beta_5 CFI_{j,t} + \varepsilon_{j,t}$$

Variable		*Estimated coefficients*	*Standard error*	*t-statistics*	*P-value*
Title	*Symbol*				
Width from origin	B_0	–5.520	2.535	–2.178	0.030
Cash balance	ACD	–0.00005	0.000	–3.434	0.0152
Market value to book value of shareholders' equity ratio	MB	–0.860	0.420	–2.046	0.041
Cash flow from operating activities	CFO	73.037	9.730	7.506	0.000
Free cash flow	CFF	0.000	0.000	–0.923	0.356
Cash flow from investment activities	CFI	-0.909	0.637	–1.427	0.154
First order auto – regression process	AR(1)	0.312	0.035	8.955	0.000

R^2 statistics = 0/1913 F statistics probability = 0/000
Modified R^2 statistics = 0/1834 Durbin – Watson = 1/9591

After making sure of classical assumptions, in order to estimate the model given the existence of auto – correlation and variance homogeneity, generalized least squares regression method and first order auto – regression process AR(1) were used in mixed data. Table 3 shows the summary of results from model estimation for the second hypothesis. According to results inserted in the table P-value of *t*-statistics is less than 5%, we can conclude that the model for the second hypothesis at 95% confidence level is significant and according to determination coefficient (0/1913) the model is valid. Due to the fact that P-value is 0/0152 for B_1, the second hypothesis of the study is not rejected at 5% significance level and there is a significant relationship between cash balance and cumulative abnormal return of future stock.

7. CONCLUSIONS

Today cash is a necessity for all companies and institutions. Cash is as blood to the human body that would otherwise not be able to continue their economic life. Now the decision making to determine the amount of cash reserves in the companies has become one of the significant factors in the finance literature. However, holding cash has its specific costs and holding cash for a long time by companies can lead to formation of agency conflict between managers and shareholders which may increase discretion of the manager and harm the benefits of shareholders. For example, opportunistic managers can hold the cash for their usages and/or holding cash for too much time and stagnation of this critical resource can decrease company's performance. On the other hand, the main advantage of holding cash in inefficient capital markets is increasing the ability of the company to use valuable investment opportunities and avoiding expensive external financial supply; cash also can prevent company from bankruptcy during crisis periods. So cash management leads to create a balance between excess and deficit liquidity, the ability of an enterprise to fulfill commitments and take advantage of investment opportunities. Overall, cash flow management leads to great successes in the enterprise and mismanagement lead to bankruptcy.

In this study we tried to present findings related to excess cash holding and performance criterion (cumulative abnormal return) of companies listed on Tehran stock exchange and the relationship between excess cash holdings and cumulative abnormal return based on the literature and mixed data. Due to differences in features like daily trading needs, maturity debt, the ability to obtain loans, etc. for various companies actually no exact model is designed to measure the optimal amount of cash but theoretically we should decrease the cash to the minimum amount; to the condition that doesn't harm normal operation of the company. In fact executives manage cash in order to increase efficiency. According to the assumptions defined and research objectives, the overall conclusion is that:

Analysis of the First Hypothesis Result

In this hypothesis, the relationship between the cash balance and cumulative abnormal returns of current year was studied. The results showed that model determination coefficient amount has high explanation potential and validity. According to the result of the test at 95% confidence level using generalized least squares regression we can conclude that there is a significant relationship between cash balance and cumulative abnormal return of the current year. However results shows that at determined confidence level, this relationship is not significant but given the negative estimated coefficient of cash balance, the results show that this relationship is negative (reverse). In other words, by increasing the excess cash holdings, current return of shares (cumulative abnormal returns) is reduced and there is a negative relationship between two variables. The results of this hypothesis contradict with the results obtained from Yousefi Rad (2013), Chavosh pour Mamaghani (2013) research is and are consistent with the results of Sharifi (2011), Fakhari and Rouhi (2014), Lashgary and colleagues (2015) and Oler and Picconi (2014) research.

Analysis of the Second Hypothesis Result

In this hypothesis, the relationship between the cash balance and future stock return was studied. The results showed that model determination coefficient amount doesn't have high explanation potential and validity. According to the result of the test at determined confidence level using generalized least squares regression we can conclude that there is a significant relationship between cash balance and future stock return. Given the negative estimated coefficient of cash balance, the results show that this relationship is negative (reverse). In other words, by increasing the excess cash holdings, future stock return is reduced. According to the fact that there is no relationship between excess cash and current and future stock returns, it seems that it was in accordance with Oler and Picconi (2014) findings. The author believes that levels of analysis sensitivity of financial statements to shareholders of Tehran Stock Exchange are to the extent that enter cash balances in their decisions that this problem is maybe due to investors' lack of information, cultural factors or abnormal and specific situation. As mentioned before, one of possible reasons for the results obtained which mainly contradict famous global research, is low level of awareness among shareholders and surface analysis of information in financial statements. Regardless of the effect of other factors which lead to such results, setting macro policies to train investors and motivating them to do deep analysis; increases demand for more and exact information thus increases quality of the results in financial statements. The results of this hypothesis contradict with the results obtained from Yousefi Rad (2013), Chavosh pour Mamaghani (2013) and are consistent with the results of Sharifi (2011), Fakhari and Rouhi (2014), Lashgary and colleagues (2015) and Oler and Picconi (2014) research.

Suggestions Based on the Research Results

- based on the hypothesis result and existing a negative relationship and considering that the aim of investors is increasing their wealth, we recommend the shareholders to consider optimal level of the company's cash because excess cash is not a guarantee for increased wealth thus they should choose companies for investment that have no excess cash.
- Given the importance of cash and optimizing cash amount needed to achieve adequate performance and efficiency, we recommend references and accounting standard setters try to provide standards based on explicit information about the items determine the optimal cash holding to allow market participants consider this information when decision making.

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